and fine plants have been secured. The plants grow rapidly when once started.

In the South American countries where this Ilex is cultivated it is planted in orchard form. It makes a small, bushy, evergreen tree with alternate leaves resembling the hollies of the North. The plant is tender, too much so in fact for any but sheltered and practically frostless spots. For this reason there would seem to be no place for its commercial exploitation in the continental United States.

The plant will be of interest to amateurs and plant lovers who can give it proper care and protection. In Paraguay, Uruguay and Argentina it thrives best on moist, cool mountain slopes where the heat is not excessive and frost does not occur.

There is considerable mystery surrounding the preparation of mate for market. In this connection it is interesting to note that George F. Mitchell, of the Bureau of Chemistry of this Department, has perfected a method for the harvesting, curing and preparing for market of an American plant known as cassina or *Ilex vomitoria.* This product appears to be fully equal to imported mate in cup quality and caffein content. According to Mr. Mitchell cassina grows naturally and luxuriantly on poor sandy soils over an area of 40,000 square miles extending from the James River, Va., along the coast of all the Southern and Gulf States to the Rio Grande River in Texas. So it would seem that we have an abundant source of mate in our own native Ilex, much hardier than the South American species and more amenable in certain ways to modern manufacturing processes.

In the summer of 1923 we sent Mr. Mitchell twelve plants of *I. paraguariensis* for the purpose of determining: (1) Whether the leaves could be removed, cured and treated by the methods worked out for cassina; (2) whether caffein was present in the plant grown by us. The caffein content was found to be about the same as found in the South American product. Mr. Mitchell's conclusions on the other points were given us in a memorandum as follows:

"I have subjected the *I. paraguariensis* plants (No. 55489) to the same methods that I have used for curing cassina and find that the material I secured from them behaves exactly like cassina; that is, that all the leaves can be removed from the branches with 'live steam' and that the fermented product can be made either by rolling the leaves and oxidizing them, as in the case of tea, or by steaming off the leaves and inoculating them with enzymes in the tea rolling machine. Since these plants behave exactly like cassina, we will be able to include *I. paraguariensis* as well as *I. vomitoria* in our public service patents."

The patents referred to by Mr. Mitchell are taken out in the name of the Government and are for the purpose of preventing private monopolization of the methods and practices.

B. T. Galloway.